

ORIGINAL ARTICLE

Nurses' delivery of the Tobacco Tactics intervention at a Veterans Affairs Medical Center

Amanda M Fore, Carrie A Karvonen-Gutierrez, AkkeNeel Talsma and Sonia A Duffy

Aims and objectives. To determine (1) factors associated with nurses' perceived confidence in and importance of delivering cessation interventions to patients after receiving the Tobacco Tactics educational module, and (2) whether self-reported delivery of smoking cessation services increased after the Tobacco Tactics educational programme was implemented.

Background. Intensive nurse-based inpatient smoking cessation interventions are effective; however, due to a lack of nurse confidence, training and time, nurse-administered cessation interventions are seldom implemented.

Design. Two cross-sectional surveys among staff trained in the Tobacco Tactics programme, conducted at two months and 15 months post-training.

Methods. Surveys were conducted to determine whether self-reported delivery of smoking cessation services by nursing staff increased after delivery of the Tobacco Tactics training at a Midwestern Veterans Affairs Medical Center. All staff members who attended the training were eligible to complete the surveys at two and 15 months post-training.

Results. Having a good understanding of the elements of smoking cessation interventions and satisfaction with training were associated with perceived confidence and importance of delivering smoking cessation interventions. Additionally, 86% of participants reported delivering cessation interventions 15 months post-training compared with 57% prior to training ($p < 0.0001$).

Conclusions. Training nurses how to deliver tobacco cessation interventions increases delivery of cessation services.

Relevance to clinical practice. Nurse-delivered cessation interventions have the potential to increase quit rates and decrease morbidity and mortality among patient populations.

Key words: implementation, nurse education, smoking

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Authors: *Amanda M Fore*, MS, RN, Nurse Coordinator/Program Analyst, National Center for Patient Safety, MI; *Carrie A Karvonen-Gutierrez*, MPH, Research Health Science Specialist, Department of Health Services Research and Development, Ann Arbor VA Center for Clinical Management Research, MI; *AkkeNeel Talsma*, PhD, RN, FAAN, Research Investigator, School of Medicine, University of Michigan, MI; *Sonia A Duffy*, PhD, RN, FAAN, Research Scientist and Professor, Department of Health Services Research and Development, Ann Arbor VA Center for Clinical Management Research and Departments of Otolaryngol-

ogy and Psychiatry, School of Nursing, University of Michigan, Ann Arbor, MI, USA

Correspondence: Sonia A Duffy, Research Scientist and Professor, Department of Health Services Research and Development, Ann Arbor VA Center for Clinical Management Research, Ann Arbor, MI, USA and Departments of Otolaryngology and Psychiatry, School of Nursing, University of Michigan, 2215 Fuller Rd. Ann Arbor, MI 48105, USA. Telephone: +1 734 395 0613.

E-mail: bump@umich.edu

What does this paper contribute to the wider global clinical community?

- Having a good understanding of the elements of smoking cessation interventions and satisfaction with training are associated with perceived confidence and importance of delivering smoking cessation interventions.
- Training nurses how to deliver tobacco cessation interventions increases delivery of cessation services.
- Nurse-delivered cessation interventions have the potential to increase quit rates and decrease morbidity and mortality among patient populations.

Introduction

Smoking rates among veterans are higher than the general population (Office of Quality & Performance 2001, Centers for Disease Control & Prevention 2007). In the Department of Veterans Affairs (VA) Veterans Integrated Service Network (VISN), 11, 28.2% of veterans are current smokers compared with 20.9% of the general population (Department of Veterans Affairs 2006). Duffy *et al.* (2008) suggest that 70% of veteran smokers reported a desire to quit; however, only 17% received smoking cessation services while hospitalised at a VISN 11 Medical Centre. Consequently, an implementation study, known as Tobacco Tactics, was initiated to disseminate a nurse-delivered smoking cessation programme to Veteran inpatients in two VISN 11 VA Medical Centres (Duffy *et al.* 2010). Although this study was conducted at two hospitals in one geographical area in the USA, smoking remains a global problem, and nurses throughout the international community are in a unique position to implement smoking cessation strategies.

Background

A 2005 Cochrane Collaborative Review on smoking cessation services delivered to patients being treated on inpatient units showed that highly intensive interventions with at least one month of follow-up were effective (Rigotti *et al.* 2002). Additionally, in 2011, the Joint Commission released standards that apply to all hospitalised smokers and include the following: (1) tobacco use screening, (2) treatment provided or offered during the hospital stay, (3) treatment provided or offered at discharge and (4) assessment of tobacco use status within 30 days after hospital discharge (Joint Commission 2011). Hospitalisation is an opportune time to deliver cessation services because patients are a captive audience, they are removed from daily cues to smoke, are often motivated to quit due to illness and have temporarily quit due to smoking bans (Smith *et al.* 1999).

A Cochrane Collaborative meta-analysis has shown that smoking cessation advice and/or counselling given by nurses to patients is efficacious (Rice & Stead 2008). Nurses are ideally positioned to provide cessation interventions because they: (1) are educated in patient education, psychosocial interventions and physiological interventions, (2) have access to and immediate rapport with patients and (3) understand patients' medical condition and can tailor the intervention accordingly. The remaining challenge is incorporating effective smoking cessation interventions into standard practice, as a large gap exists between the availability of these interventions and

their widespread dissemination and implementation (Taylor & Curry 2004).

Although nurses generally have a positive attitude concerning cessation services and are in an ideal position to provide such services, many frequently do not deliver cessation interventions (McCarty *et al.* 2001, Casey 2007). While patient motivation and lack of time are cited as high-frequency barriers limiting the delivery of cessation interventions in clinical practice, lack of skills and knowledge on how to help patients quit closely follows (Sarna *et al.* 2001). Cross-sectional surveys of nurses have shown that self-efficacy (confidence) and perceived importance of counselling are cited as barriers to delivering tobacco cessation counselling (Borrelli *et al.* 2001, Sarna *et al.* 2001) and are related to lack of training in cessation interventions, which is rarely offered in nursing curricula (Wewers *et al.* 2004). Despite the fact that the importance of educating providers in cessation interventions has been noted in the literature (Campbell *et al.* 2011), once nurses are trained in cessation interventions, little is known about nurses' perceptions and delivery of cessation services (Taylor & Curry 2004). Hence, the objectives of this study were to determine: (1) factors associated with nurses' perceived confidence in and importance of delivering cessation interventions to patients after receiving the Tobacco Tactics educational module and (2) whether self-reported delivery of smoking cessation services increased after the Tobacco Tactics educational programme was implemented.

Methods

Design

The implementation of the Tobacco Tactics study in the VA is described in a prior published study (Duffy *et al.* 2010). As part of this larger study, two cross-sectional surveys of nurses and other staff were conducted two months after participating in the Tobacco Tactics training and again 15 months post-training. Human subjects approval was received from the VA in which the research was conducted.

Sample

The Tobacco Tactics training was provided to 333 clinical staff, of which 85% were registered nurses (RNs) or licensed practical nurses (LPNs), who provide care to patients at a Midwestern VA Medical Center. Other participants included nursing students, nursing assistants, physicians, respiratory therapists and social workers. The one-hour mandatory training for nurses was offered during a four-month period in 2007 and during monthly orientation sessions for new

nurses. Nurses received one continuing education credit (CEU) for participating in the training. All staff members who attended the training were eligible to complete a survey two months post-training (to measure proximal response to training) and then again 15 months post-training (to measure distal response to the training). Anonymous staff surveys, along with return envelopes, were delivered to employee mailboxes or through interdepartmental mail. Because the response population differed for the two surveys and unique identifiers were not provided on the surveys, individual differences between the two time points could not be examined. The response rate was 49% (145/298) for the two-month survey and 90 staff returned the 15-month survey. The response rate for the 15-month survey is unknown as the total number of surveys provided was not recorded.

Demographic and smoking history information of the staff who completed the two- and 15-month post-training surveys is included in Table 1. Less than 10% of the samples were current smokers, nearly two-thirds were >45 years old, and over two-thirds had a four-year college degree. Most were female, White and worked on an acute care unit. Additional demographics are displayed in Table 1.

Intervention

The Tobacco Tactics toolkit for nurses contains the following: (1) one contact hour for training, (2) a one-hour Power-Point presentation on behavioural and pharmaceutical interventions, (3) a pocket card 'Helping Smokers Quit: A Guide for Clinicians' developed by the US Department of Health and Human Services Public Health Service and Tobacco Free Nurses, (4) evidence-based behavioural and pharmaceutical protocols (Table 2) (Duffy *et al.* 2010) and (5) computerised template for nurse documentation.

The evidence-based intervention uses the Tobacco Tactics toolkit for patients, which includes a: (1) brochure, (2) educational video on smoking cessation, (3) Tobacco Tactics manual, (4) pharmaceuticals, (5) 1-800-QUIT-NOW helpline and (6) follow-up phone calls. A cessation brochure is provided to all smokers. For those interested in cessation, the educational programme, 'Smoking: Getting Ready to Quit', can be viewed on the hospital's education channel or by videotape. The Tobacco Tactics manual is written at an eighth-grade reading level, with large print, colour pictures, stories and written exercises for patients. Providing the brochure, videotape and manual in advance saves the nurses' time; nurses spend 10–20 minutes counselling patients using the pieces of the toolkit. The pharmaceutical protocol (Table 2) included an algorithm for providing: (1) nicotine replacement therapy (NRT), (2) bupropion, (3) combination of NRT and

Table 1 Nurses' smoking history and demographic variables

	Two-month post-training assessment <i>n</i> (%)	Fifteen-month post-training assessment <i>n</i> (%)
Smoking status		
Current	11 (7.8)	4 (4.8)
Former	52 (36.6)	31 (36.9)
Never	79 (55.6)	49 (58.3)
Age (years)		
<35	23 (16.3)	14 (19.2)
35–44	29 (20.6)	12 (16.4)
45–54	57 (40.4)	27 (37.0)
55–64	30 (21.3)	19 (26.0)
>64	2 (1.4)	1 (1.4)
Sex		
Male	20 (14.3)	13 (16.3)
Female	120 (85.7)	67 (83.8)
Race		
White	100 (80.7)	66 (84.6)
Black	16 (12.9)	5 (6.4)
Other	8 (6.5)	7 (9.0)
Have four-year college degree	89 (66.9)	56 (70.9)
Unit		
Inpatient psychiatry	13 (10.7)	10 (13.3)
Outpatient psychiatry	7 (5.7)	5 (6.7)
Surgery	11 (9.0)	3 (4.0)
Inpatient oncology, medicine, telemetry, cardiac	32 (26.2)	21 (28.0)
Med ECC/nursing home	12 (9.8)	6 (8.0)
Intensive care units (MICU, TICU, SICU)	19 (15.6)	15 (20.0)
Ambulatory care	7 (5.7)	7 (9.3)
Outpatient (respiratory, endoscopy, radiology, IV team)	13 (10.7)	4 (5.3)
Nonpatient care (research, quality management, medical care cost recovery)	4 (3.3)	1 (1.3)
Inpatient house supervisors	4 (3.3)	3 (4.0)

MICU, TICU, and SICU have been defined as Intensive Care Units (Medical, Thoracic, and Surgical).

bupropion and (4) varenicline. The 1-800-QUIT-NOW helpline is available in most states and, depending on the state, offers counselling and free medications to those without insurance. Volunteers were trained to conduct the postdischarge follow-up phone calls (Duffy *et al.* 2010).

Data collection

The anonymous survey asked the nurses questions pertaining to the Tobacco Tactics training and implementation at

Table 2 Tobacco Tactics protocol

<i>Tobacco Tactics pharmaceutical management protocol</i>	
1. Recommend nicotine replacement (patch, gum or lozenge) if:	Never used patch, gum or lozenge before Used patch, gum or lozenge successfully in the past (smoke-free >three months)
2. Recommend bupropion if:	Failed nicotine replacement monotherapy in the past (smoke-free <three months) Patch, gum or lozenge intolerant (i.e. rash, etc.) History of depression or currently has depressive symptoms
3. Recommend combination nicotine replacement (patch, gum or lozenge) and bupropion if:	Failed nicotine replacement and bupropion monotherapy in the past
4. Recommend varenicline if:	Intolerance or treatment failure to nicotine replacement and bupropion
<i>Tobacco Tactics behavioural management protocol</i>	
1. Assess whether patient interested in quitting	
2. If patient not interested, leave brochure at bedside	
3. If patient interested, leave brochure and arrange for patient to view videotape	
4. After videotape, provide patient with patient manual to read if able	
5. Using patient manual, assist patient with behavioural intervention including:	Self assessment Smoker type Smoking costs Handling cravings Relapse prevention Medication options
6. Along with patient, identify and arrange for cessation medications (see pharmaceutical protocol)	
7. Arrange for follow-up calls (Duffy <i>et al.</i> 2010)	

the VA including: (1) satisfaction with the material presented (rated on a five-point Likert scale ranging from extremely satisfied to extremely dissatisfied), (2) perception of understanding the elements of the smoking cessation intervention (rated on a five-point Likert scale ranging from strongly agree to strongly disagree), (3) confidence in abilities to provide tobacco cessation services (rated on a five-point Likert scale ranging from extremely confident to not at all confident), (4) perceived level of importance of providing services (rated on a five-point Likert scale ranging from very important to not at all important), (5) anticipated barriers to implementation (yes/no) and (6) 'Is there anything that would make it easier for you to implement the smoking cessation intervention in your unit?' (open ended). Participants were also asked questions about their own smoking status (current, former and never smoker) and demographic information (age, gender, race and educational level) and type of work unit.

Information on provision of services pretraining and post-training was obtained from the 15-month post-training survey that asked respondents about their pretraining behaviour retrospectively and their current (post-training) behaviour with the following two questions: (1) 'Do you personally provide smoking cessation services to veterans?' and (2) 'Prior to the Tobacco Tactics training, did you personally provide smoking cessation services to veterans?' This information was used to compare preintervention to postintervention self-reported cessation delivery rates.

Data analysis

Frequencies were examined for all variables. To examine whether or not perceived self-confidence in and importance of delivering the intervention decreased with increased time post-training, the Kruskal–Wallis test was used to compare the proportions of responses to each question from the two-month post-training surveys vs. the 15-month post-training surveys. The Kruskal–Wallis test, a nonparametric test for non-normally distributed data (Corder & Foreman 2009), was used to compare responses from two different samples. This test was applied to check whether the two- and 15-month post-training survey proportions were different. To examine whether or not provision of services changed in response to the training, chi-square tests were used to compare the proportion of nurses' reporting that they provided smoking cessation services prior to receiving the Tobacco Tactics training compared to after they received the Tobacco Tactics training. Moreover, chi-square tests were used to compare the proportion of nurses' reporting that they provided smoking cessation services in a cross-sectional pre-training study in 2004 to 15 months post-training in 2007.

As all of the respondents did not answer all of the questions, the sample size varied for different results. Those with missing data for a particular question were not included in the analysis. Values for $p < 0.05$ are reported. Two members of the research team categorised the comments by topic. Data analysis for the purposes of this study was conducted using (SAS Version 9.2; SAS Institute Inc., Cary, NC, USA).

Results

At 15 months post-training, the vast majority (over 85%) of staff felt at least moderately, very or extremely confident in providing smoking cessation services and felt that providing these services was important or very important. Likewise, the vast majority (nearly 90%) were somewhat or extremely satisfied with the training and agreed or strongly

agreed that they had a good understanding of the elements of the intervention.

Nearly three-quarters of the participants indicated that they anticipated barriers to implementing the Tobacco Tactics intervention. The most commonly cited barriers included patients not being interested and lack of time. Common suggestions for improvement, as indicated with the open-ended question, included designating key personnel to perform or coordinate smoking cessation interventions ($n = 10$), having resources readily available ($n = 10$), planning scheduled sessions for counselling ($n = 7$) and improving the documentation template to improve usability ($n = 4$).

Satisfaction with the training and having a good understanding of the intervention were positively associated with perceived confidence in providing cessation services and feeling that delivering cessation interventions was important. Those who were extremely satisfied with the training were significantly more confident in their abilities to provide smoking cessation interventions ($p < 0.0001$) and to think it was important to provide such services on their units ($p = 0.0002$) (Table 3). Moreover, those who strongly agreed to have a good understanding of the elements of the smoking cessation intervention were also significantly more confident in their abilities to provide smoking cessation interventions ($p < 0.0001$) and to think it was important to provide such services on their units ($p = 0.0083$; Table 3). There were no significant differences in whether or not participants anticipated barriers to implementing the intervention, smoking status, age, sex, race, or education level or type of work unit and perceived self-confidence in and

importance of delivering the intervention. The number of participants in this study who currently smoked was very small ($n = 8$, 4.8% participants who completed 15-month post-training surveys), and there was no statistically significant difference between smoking status and self-report of pre or post-training provision of smoking cessation services. In fact, the reported rates of smoking cessation service provision were higher among the current smokers (75%, $n = 3$, before training, 100%, $n = 4$, after training) as compared to former smokers (56.7%, $n = 17$ and 77.4%, $n = 24$, respectively) or never smokers (57.1%, $n = 28$ and 89.6%, $n = 43$, respectively) (Table 4). Additionally, there were no significant differences in perceived self-confidence in or level of importance of delivering the intervention when comparing responses from two-month vs. 15-month post-training surveys.

Significant differences in self-reported delivery of cessation services pre and postintervention are shown in Table 5.

Table 4 Association between smoking status and self-reported delivery of cessation services

	Prior to training, provided smoking cessation to veterans, n (%)	Since receiving the training, now provide smoking cessation to veterans, n (%)
Smoking status		
Current	3 (75.0)	4 (100.0)
Former	17 (56.7)	24 (77.4)
Never	28 (57.1)	43 (89.6)
p -value	0.78	0.23

Based on Kruskal–Wallis test (Corder & Foreman 2009).

Table 3 Associations between nurses satisfaction with and having understanding of the Tobacco Tactics training and perceived confidence in and importance of delivering cessation services

	How confident are you in your abilities to provide smoking cessation services to smokers?			How important do you think it is to provide the smoking cessation intervention in your unit?		
	Extremely	Very	Moderately/somewhat/not at all	Extremely	Very	Neutral/not very/not at all
In general, how satisfied were you with the material presented? (%)						
Extremely satisfied	20 (24.4)	45 (54.9)	17 (20.7)	50 (61.0)	25 (30.5)	7 (8.5)
Somewhat satisfied/neutral/undecided/somewhat not/extremely not satisfied	3 (4.8)	19 (30.7)	40 (64.5)	16 (26.2)	32 (52.5)	13 (21.3)
Chi-square statistic (DF)		30.21 (2)			17.5 (2)	
p -value		<0.0001			0.0002	
Do you feel you have a good understanding of the elements of the smoking cessation intervention? (%)						
Strongly agree	19 (46.3)	18 (43.9)	4 (9.8)	27 (65.9)	9 (22.0)	5 (12.2)
Agree/neutral/disagree/strongly disagree	4 (3.9)	46 (44.7)	53 (51.5)	39 (38.2)	48 (47.1)	15 (14.7)
Chi-square statistic (DF)		46.0 (2)			9.6 (2)	
p -value		<0.0001			0.0083	

Bold values are significant at $p < 0.01$.

Table 5 Self-reported delivery of cessation services pre and postintervention

	Preintervention self-reported cessation delivery rates, <i>n</i> (%)	Postintervention self-reported cessation delivery rates, <i>n</i> (%)	<i>p</i> -value
Among nurses who participated in the Tobacco Tactics intervention	40 (57.1)	60 (85.7)	0.0002
Comparison between a cross-section of nurses surveyed in 2004 (preintervention) and the Tobacco Tactics nurses postintervention	30 (43.5)	60 (85.7)	<0.0001

Among the nurses surveyed 15 months post-training, 57.1% ($n = 40$) reported delivering cessation interventions prior to the Tobacco Tactics training compared with 85.7% ($n = 60$) at the 15-month post-training follow-up ($p = 0.0002$). The 85.7% self-reported postintervention delivery of cessation services was also significantly higher than the published 2004 pretraining study (Duffy *et al.* 2008) where only 43.5% ($n = 30$) indicated that they personally provided smoking cessation services to veterans ($p < 0.0001$).

Discussion

With as little as a one-hour training session, the proportion of nurses self-reporting the provision of cessation services significantly increased from preintervention to postintervention, suggesting that the Tobacco Tactics training increased nurses' likelihood of providing smoking cessation services. Implementing standard protocols, which have been shown to be effective in increasing smoking cessation counselling interventions provided by nurses (Nolan *et al.* 2005), likely enhanced service delivery. When smokers are offered cessation services, particularly in inpatient settings, a significant number of smokers quit (Rigotti *et al.* 2002). As knowledge and satisfaction are associated with confidence and importance, careful consideration of smoking cessation training and protocol development is necessary.

Post-training, most nurses were confident providing cessation services compared to 60% in the prior preintervention study (Duffy *et al.* 2008). Moreover, post-training, there were no significant changes in perceived confidence in and

perceived importance of delivering the intervention between the two-month surveys and the 15-month surveys, suggesting sustainability over time. Those who were more satisfied with and had a better understanding of the Tobacco Tactics intervention had significantly higher perceived confidence scores and importance scores related to providing the intervention. Providers who feel more confident in their ability to do what is expected (self-efficacy), recognise the need and importance for the intervention and have the requisite skills are more likely to implement a programme at higher levels of fidelity (Durlak & DuPre 2008). Increased self-confidence and perceived importance of delivering cessation interventions have been shown to be associated with a greater likelihood that cessation interventions will be delivered (Laschinger & Tresolini 1999, Borrelli *et al.* 2001).

While three-quarters of the respondents anticipated barriers to implementation, anticipated barriers did not affect ones' perceived confidence in or importance of delivering the interventions. There was the perception among over half of the nurses that patients were not interested in cessation services. Yet, data have shown that over 80% of smokers and 70% of Veteran smokers (Duffy *et al.* 2008) want to quit (Cameron *et al.* 1994). Patients have reported social support as an important barrier to successful smoking cessation (Macnee & Talsma 1995a), and nursing assessment of smoking patients' perceived barriers to smoking cessation and self-efficacy can support smoking cessation (Macnee & Talsma 1995b). Similar to other studies (McCarty *et al.* 2001, Sarna *et al.* 2001), lack of time remains a barrier, and several nurses suggested there be a dedicated tobacco cessation counsellor. Yet, designated cessation counsellors are expensive and may have difficulty locating patients in busy inpatient settings, whereas nurses have ready access to patients, have the most one-on-one contact with patients and are positioned to coordinate smoking cessation interventions around other patient care needs.

Contrary to the literature (Braun *et al.* 2004), no significant differences were seen between current, former and never smokers related to perceived confidence in and importance of delivering tobacco cessation interventions, perhaps because <10% of the nurses in this study were current smokers. Age, sex, race and educational level (shown to be associated with nurses smoking and views about smoking) (Duffy *et al.* 2008, Essenmacher *et al.* 2009) or type of work unit was not associated with perceived confidence in and importance of delivering cessation services. These data suggest that nurses of all ages, sexes, races and educational levels on any work unit can acquire this skill.

Limitations

The survey was conducted with all inpatient nurses in a particular facility and is thereby only generalisable to those staff. The response rate was low (45%), albeit not particularly low compared to other studies surveying nurses on tobacco cessation programmes in clinical practice (Sarna *et al.* 2001). Despite these limitations, this study is one of only a few that provide valuable process evaluation about the implementation of nurse-delivered tobacco cessation interventions that can be used to identify potential and actual influences on the progress and effectiveness of implementation efforts (Stetler *et al.* 2006).

Conclusions

Nurses who participated in the Tobacco Tactics intervention reported high perceived confidence in and importance of delivery of cessation interventions. Self-reported delivery of cessation services increased after the implementation of the Tobacco Tactics educational programme, which is likely to enhance quit rates.

Relevance to clinical practice

The nurse-delivered Tobacco Tactics intervention meets the standards set by the Joint Commission released in July 2011 including provision of treatment during the hospital stay, provision of treatment at discharge and one-month

postdischarge follow-up. This study showed that training nurses in delivering the Tobacco Tactics intervention increased delivery of services. Nurse-delivered cessation interventions, such as the Tobacco Tactics intervention, have the potential to increase quit rates and decrease morbidity and mortality among patient populations. The Tobacco Tactics intervention is currently being tested in a large National Institutes of Health-funded study outside the VA system.

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Disclosure

The authors have confirmed that all authors meet the ICMJE criteria for authorship credit (www.icmje.org/ethical_1author.html), as follows: (1) substantial contributions to conception and design of, or acquisition of data or analysis and interpretation of data; (2) drafting the article or revising it critically for important intellectual content; and (3) final approval of the version to be published.

Conflict of interest

No conflict of interest has been declared by the authors.

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